

***PhenoSense™ HIV Resistance Test Vector.***

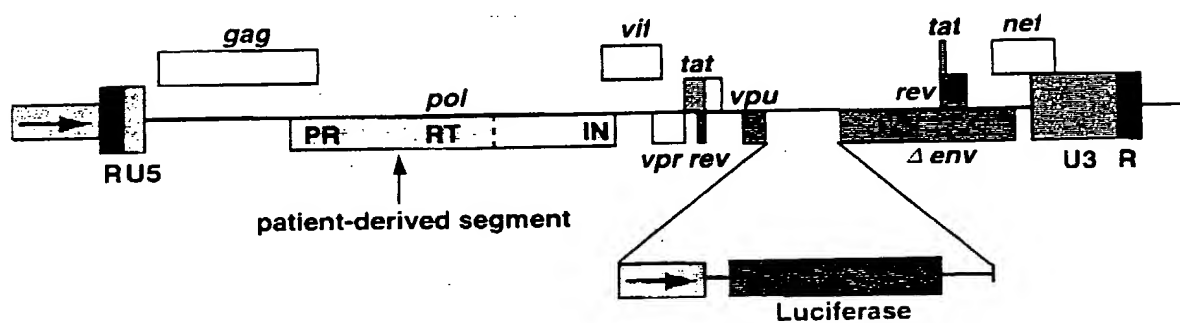


FIG. 2

***PhenoSense™ HIV Schematic Diagram.***

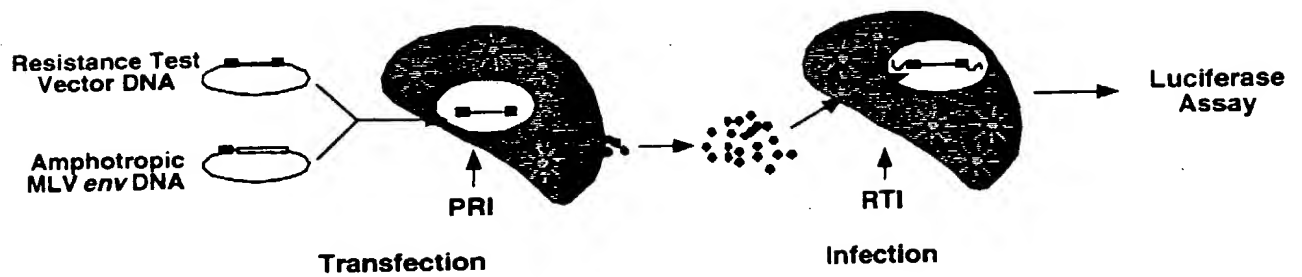
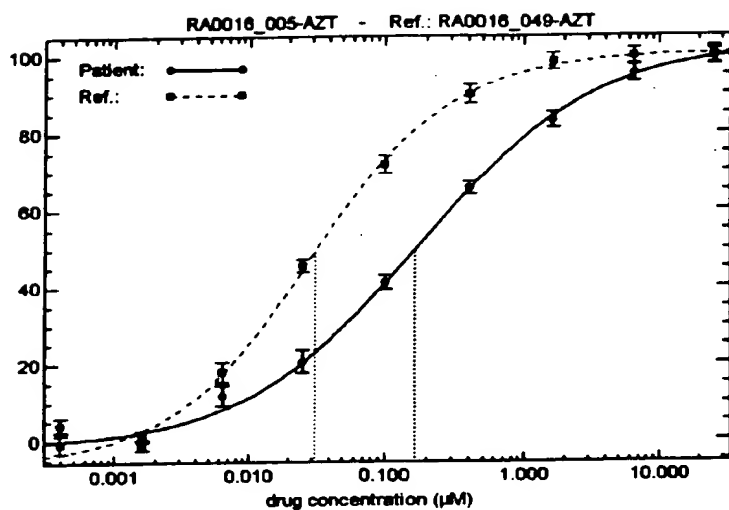


FIG. 3A

## NRTI - AZT

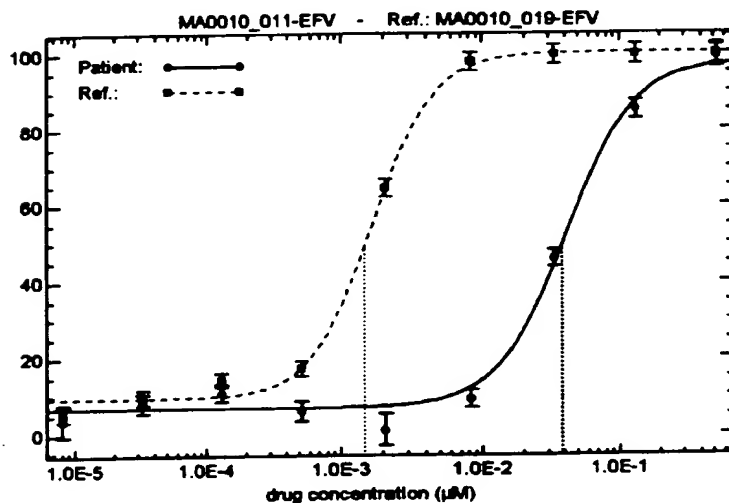


AZT-Control  
AZT-Patient

$\text{IC}_{50} = 0.032$   
 $\text{IC}_{50} = 0.170$  (5.2-fold)

FIG. 3B

## NNRTI - Efavirenz

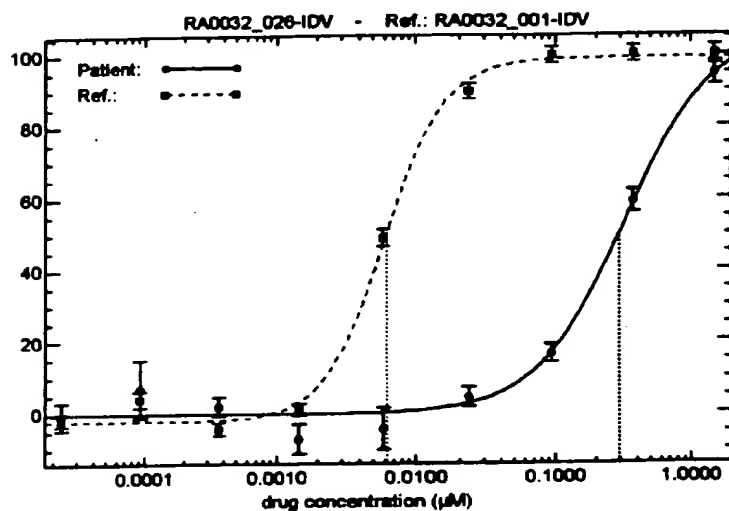


EFV-Control  
EFV-Patient

$\text{IC}_{50} = 0.0015$   
 $\text{IC}_{50} = 0.0380$  (25.6-fold)

FIG. 3C

## PRI - Indinavir



IDV-Control  
IDV-Patient

$\text{IC}_{50} = 0.0062$   
 $\text{IC}_{50} = 0.2935$  (47.4-fold)

FIG. 4A SQV

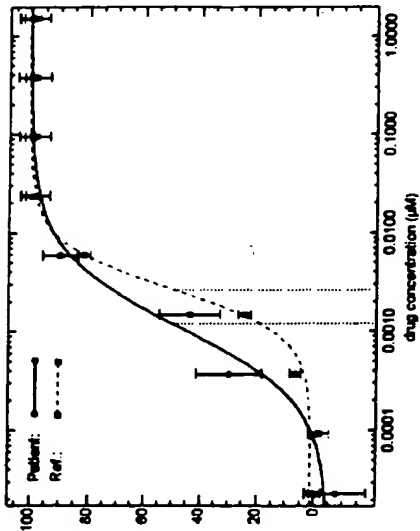


FIG. 4B IDV

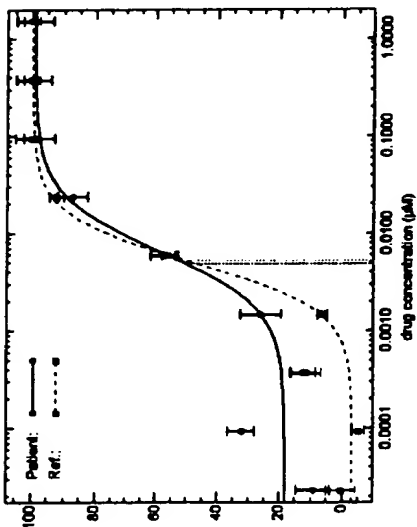


FIG. 4C RTV

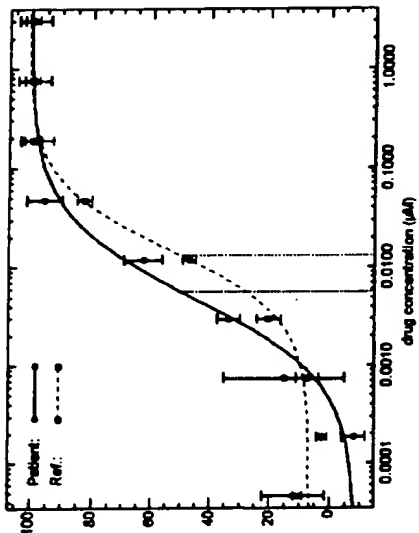


FIG. 4D NFV

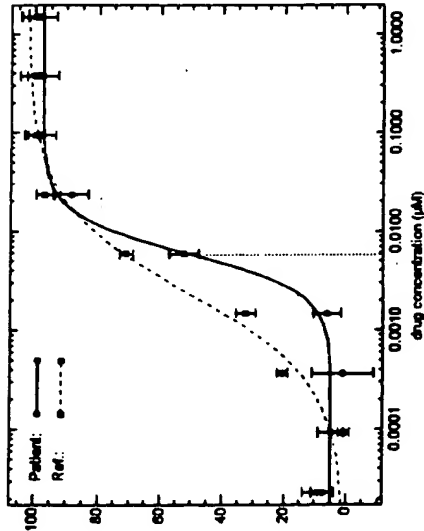


FIG. 4E AMP

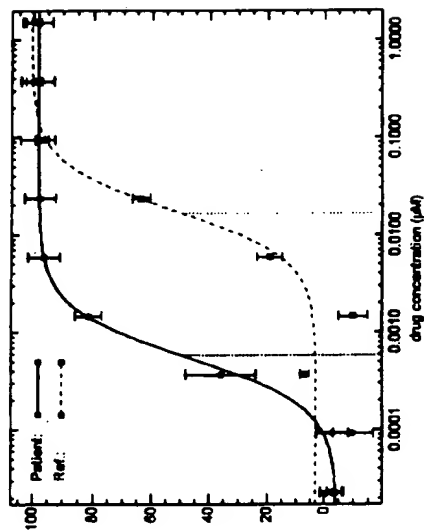


FIG. 5A SQV

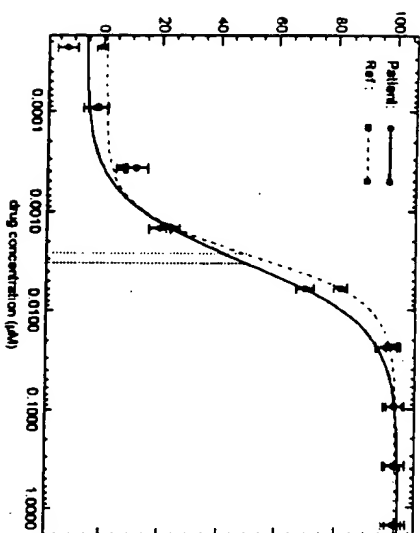


FIG. 5B IDV

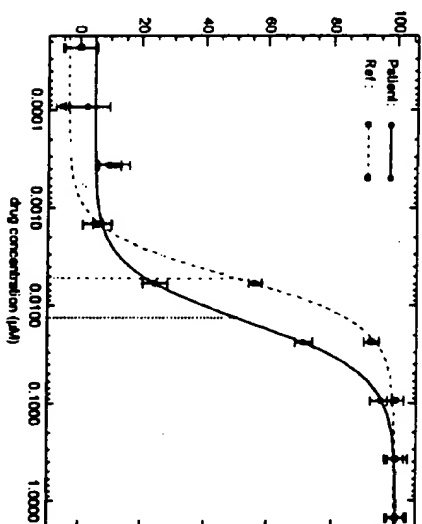


FIG. 5C RTV

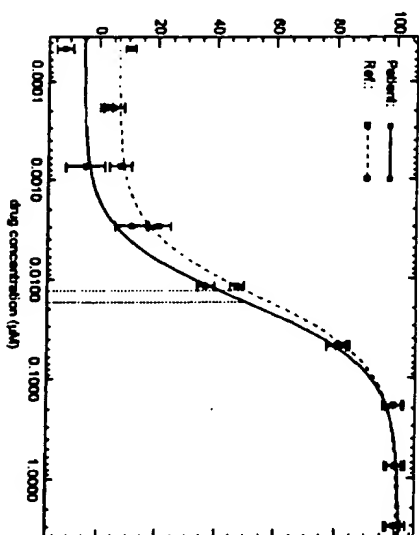


FIG. 5D NFV

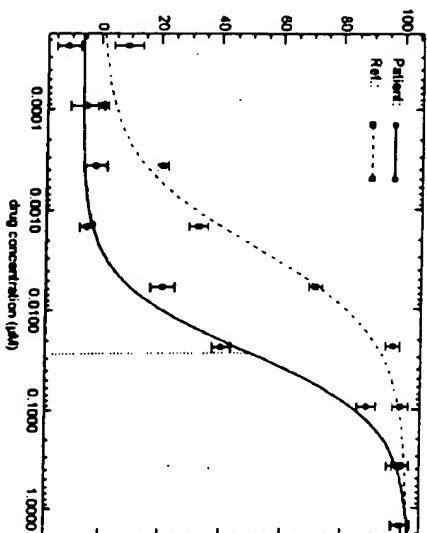
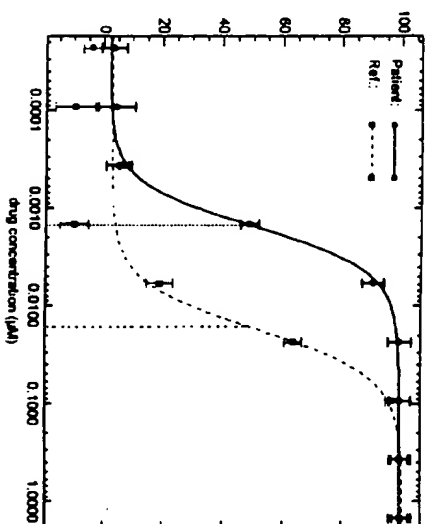
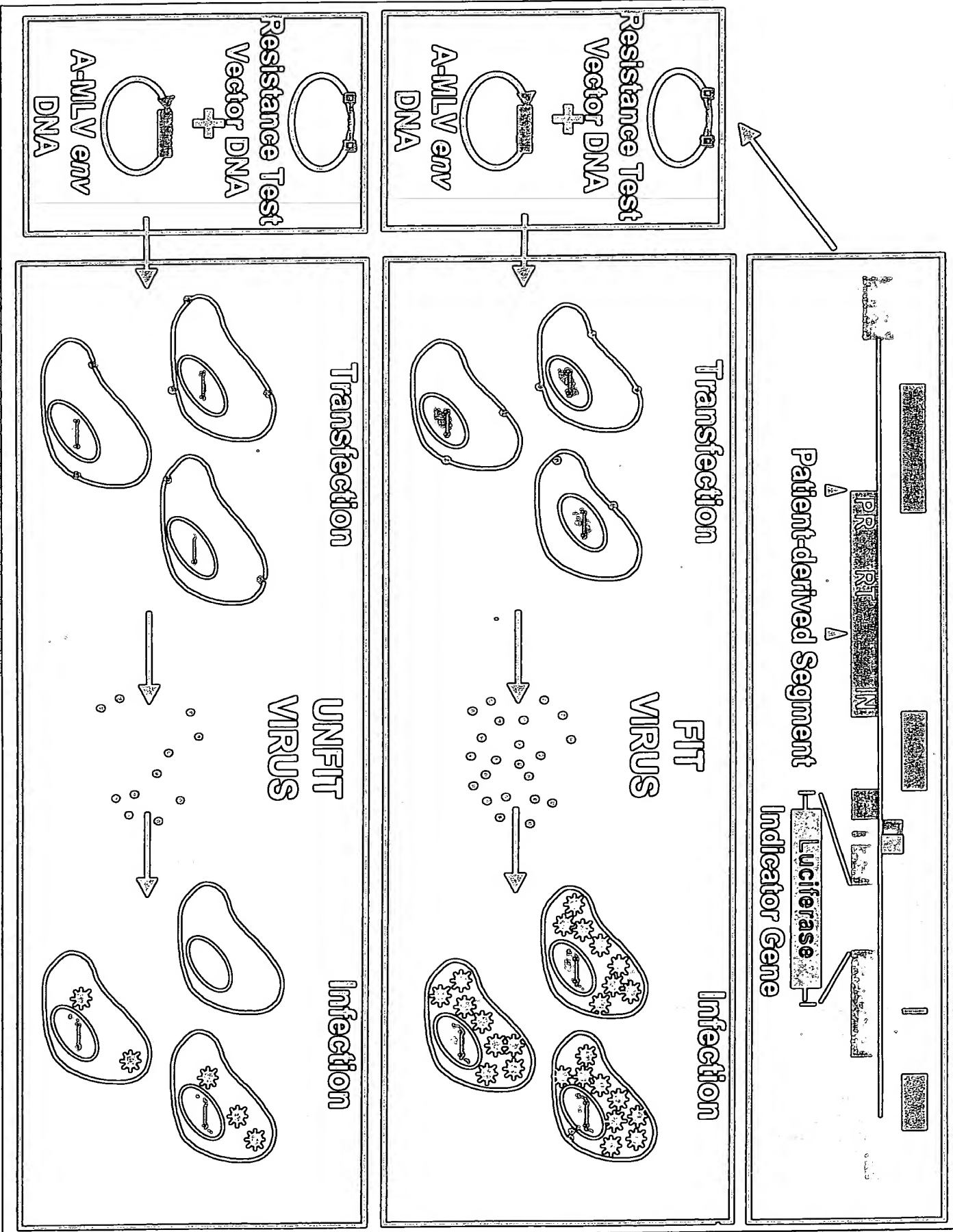


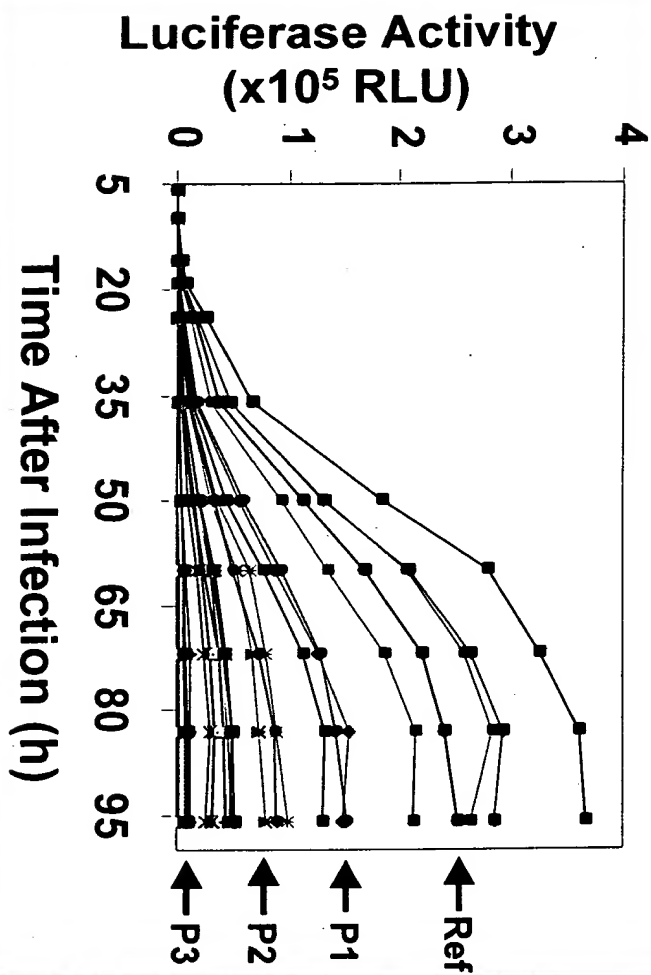
FIG. 5E AMP



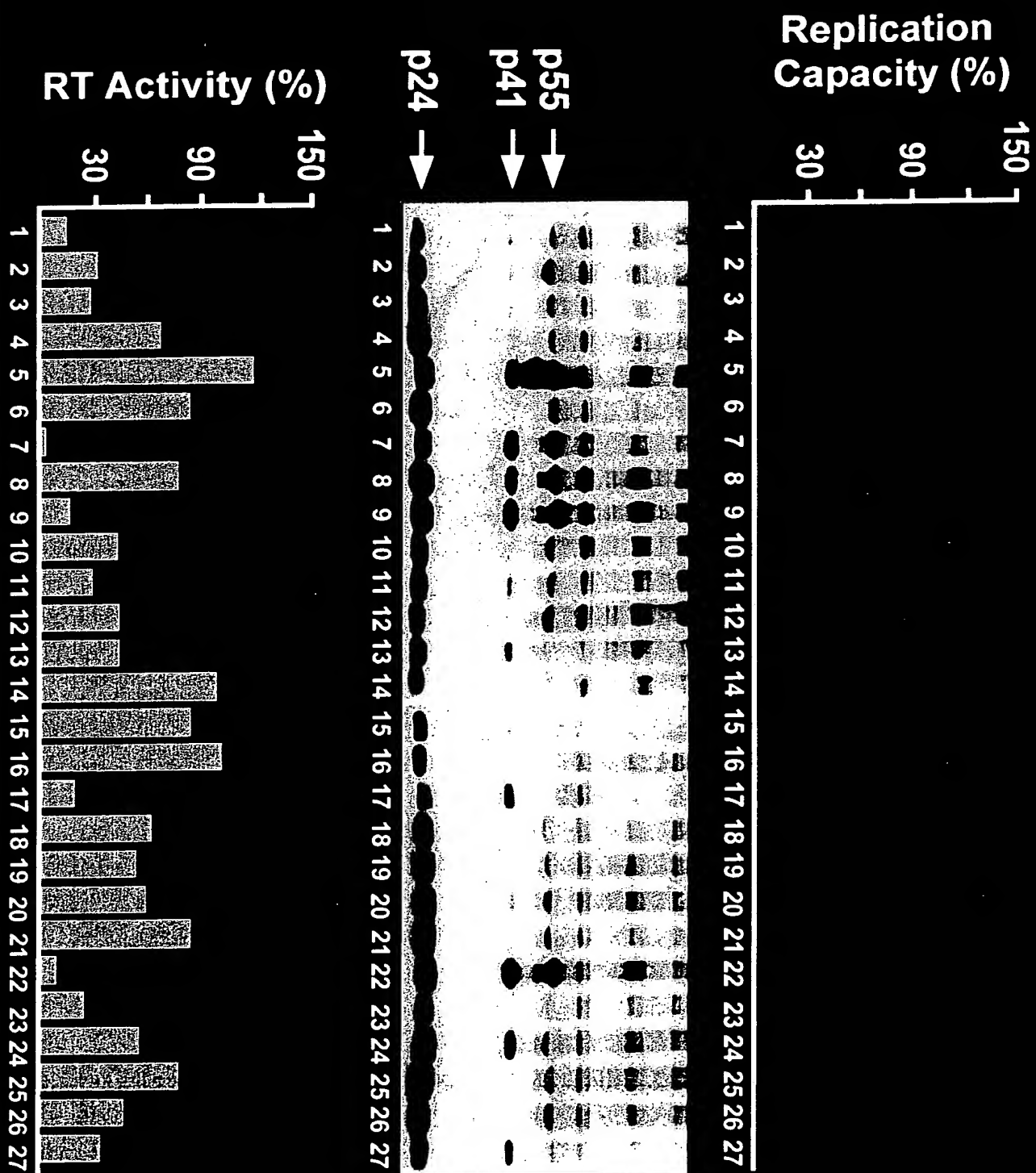
# Figure A: Fitness Assay



**Figure B: Luciferase Activity in Infected Cells**

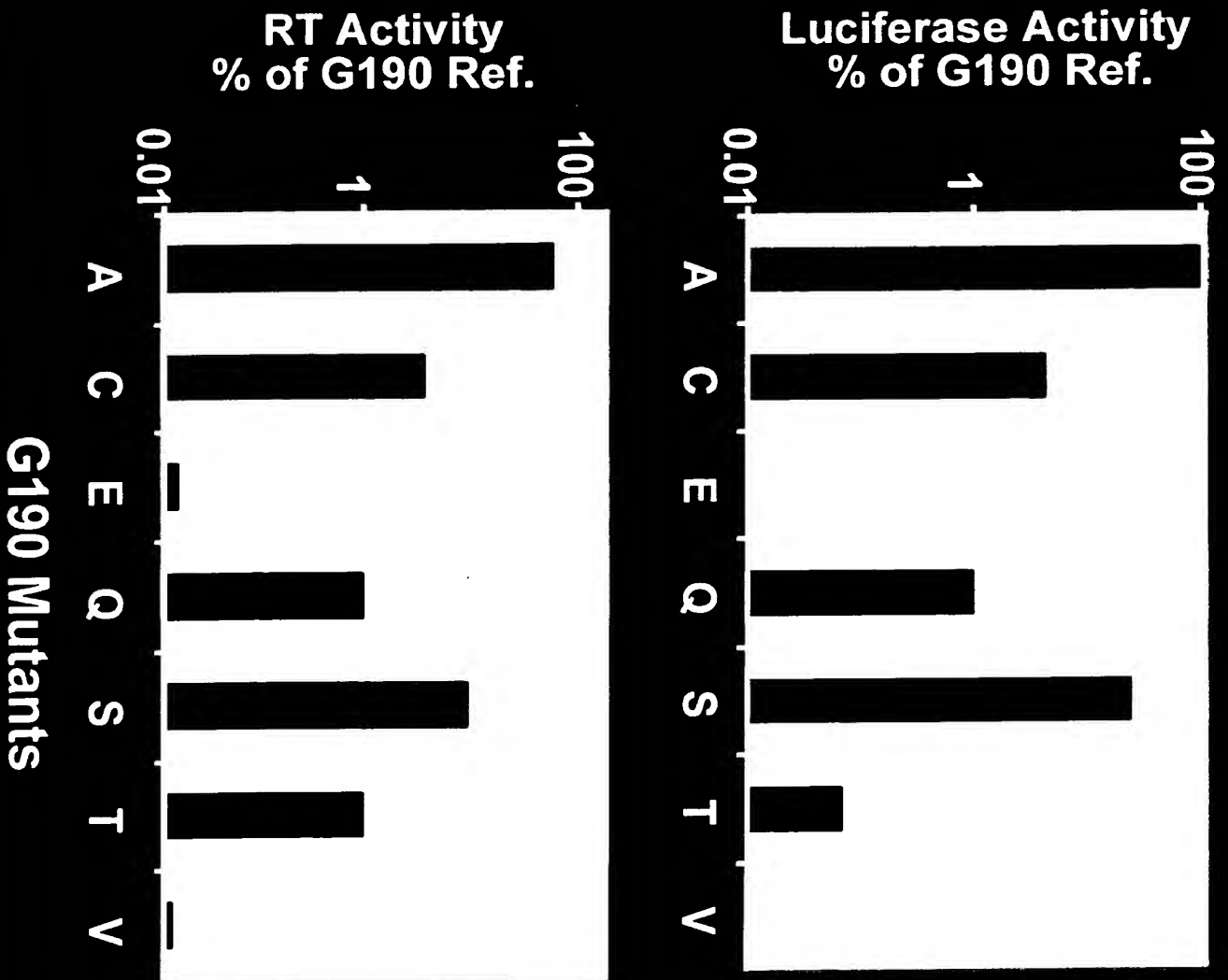


Fold Resistance				
	P 1	P 2	P 3	
NRTI	AZT	27	17	6
	3TC	>100	3	>100
NNRTI	NVP	40	0.3	0.3
	SQV	17	68	4
PRI	IDV	30	47	39
	RTV	11	62	63
	NFV	57	55	28
	AMP	4	18	3

**Figure C: Replication Fitness, PR Processing, and RT Activity**



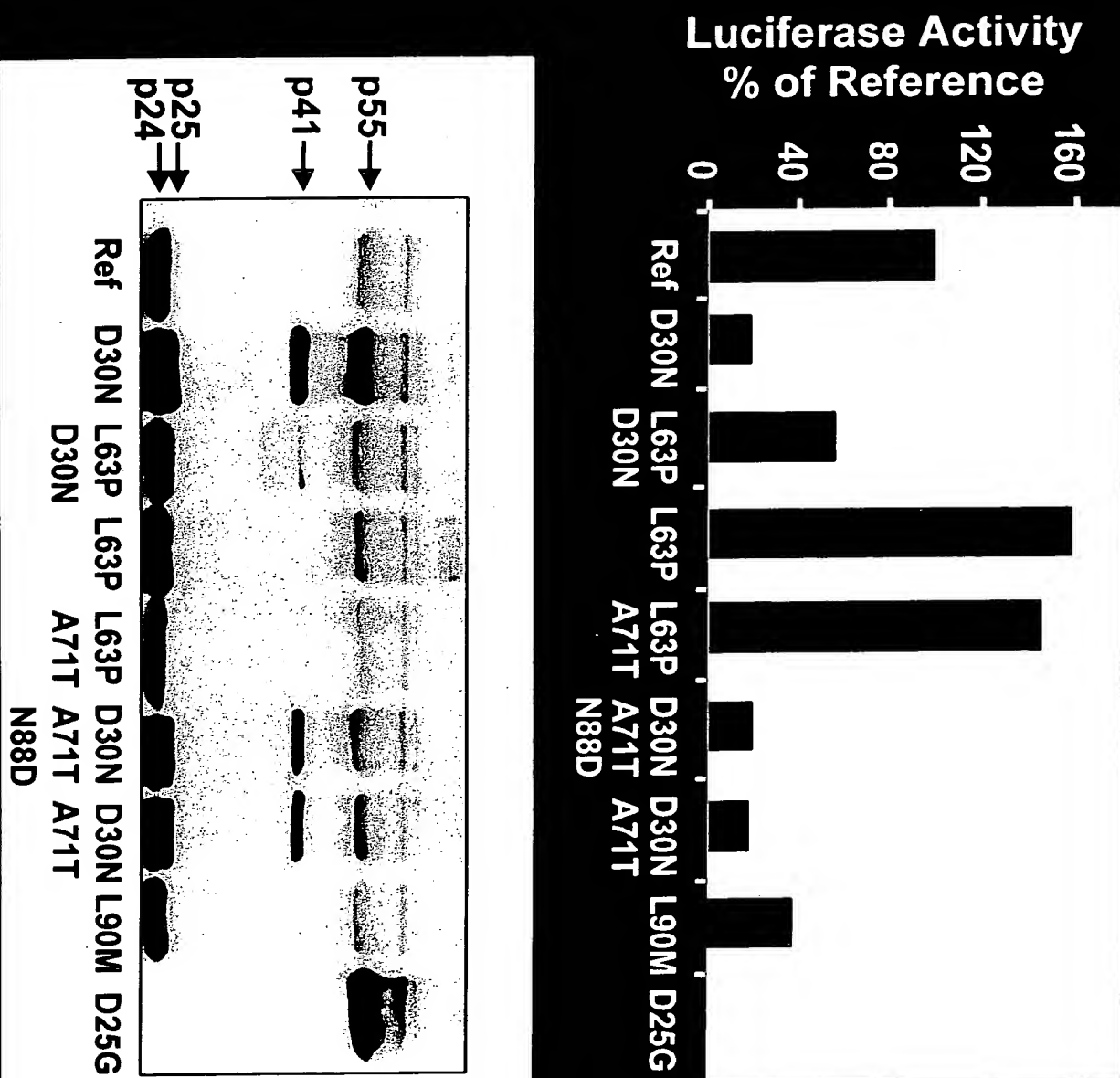
**Figure D: Site Directed RT Mutants (G190 Series)**



A = Ala  
C = Cys  
E = Glu  
Q = Gln  
S = Ser  
T = Thr  
V = Val

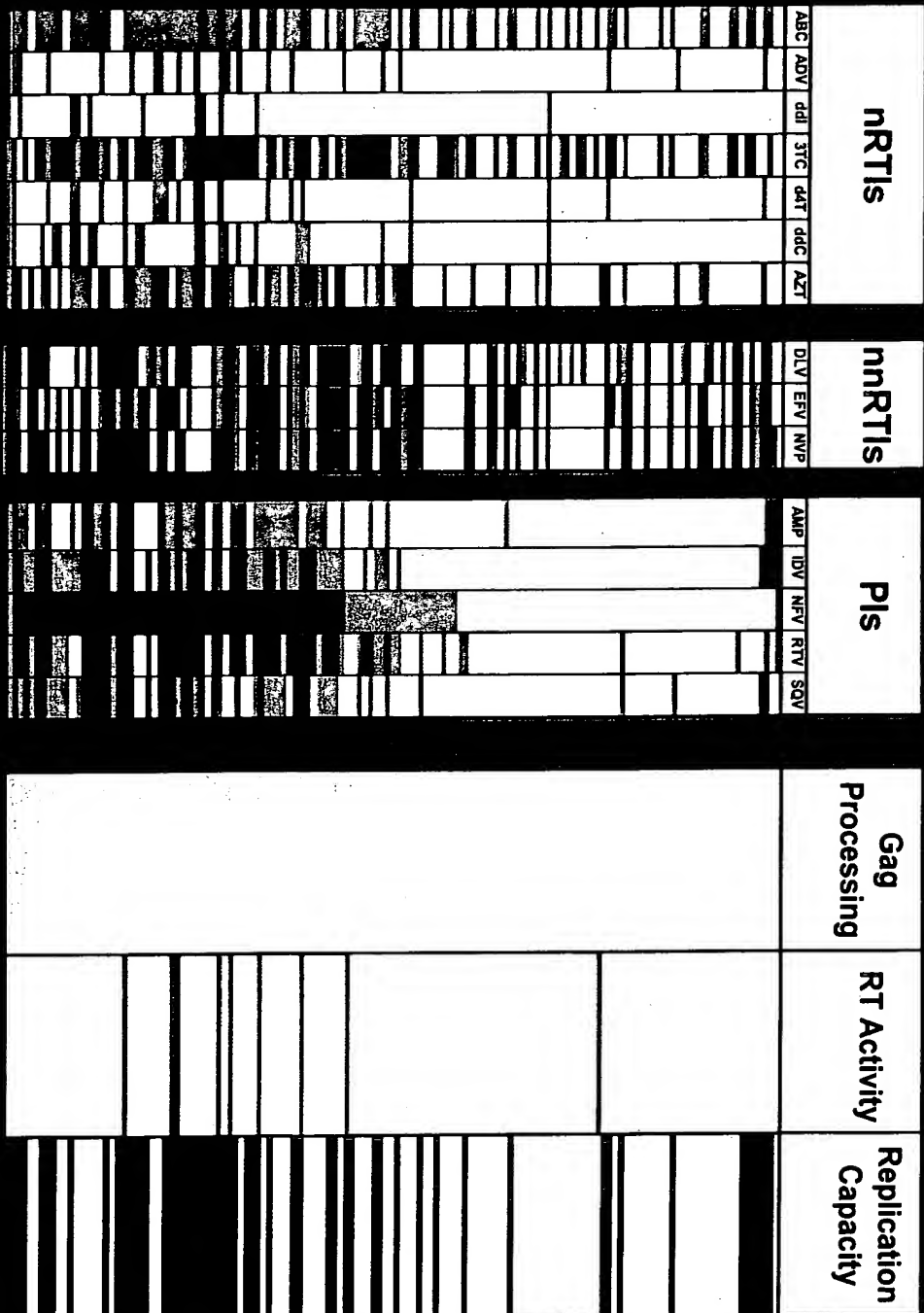
**Figure E: Site Directed PR Mutants**

10/21



# Figure F: Phenotypic Drug Susceptibility, Replication Fitness and PR/RT Function

## Phenotypic Drug Susceptibility      Replication Fitness and PR/RT Function



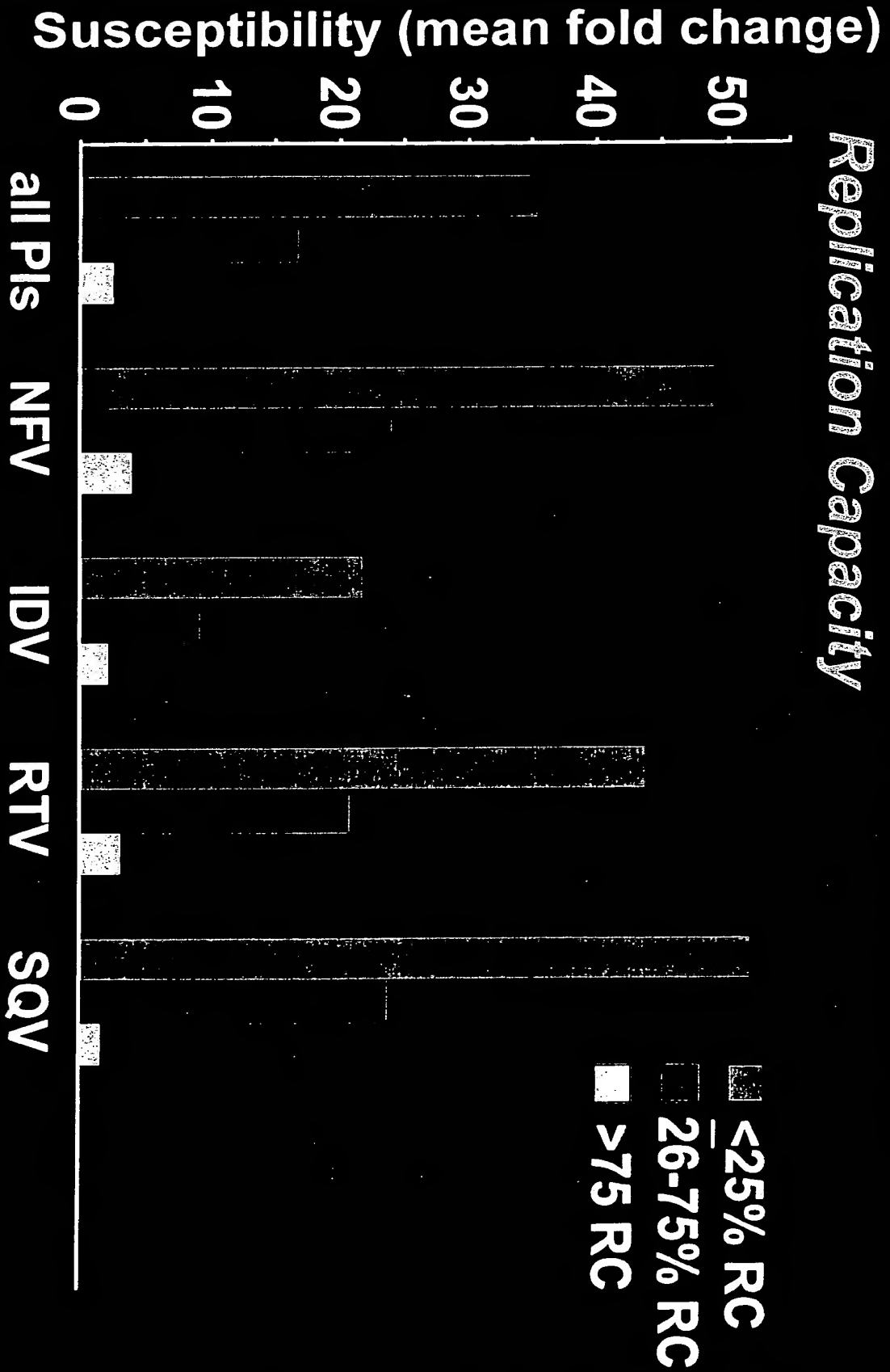
**Fold Change in Susceptibility**

- <0.4
- 0.4 to 2.5
- 2.5 to 10
- > 10

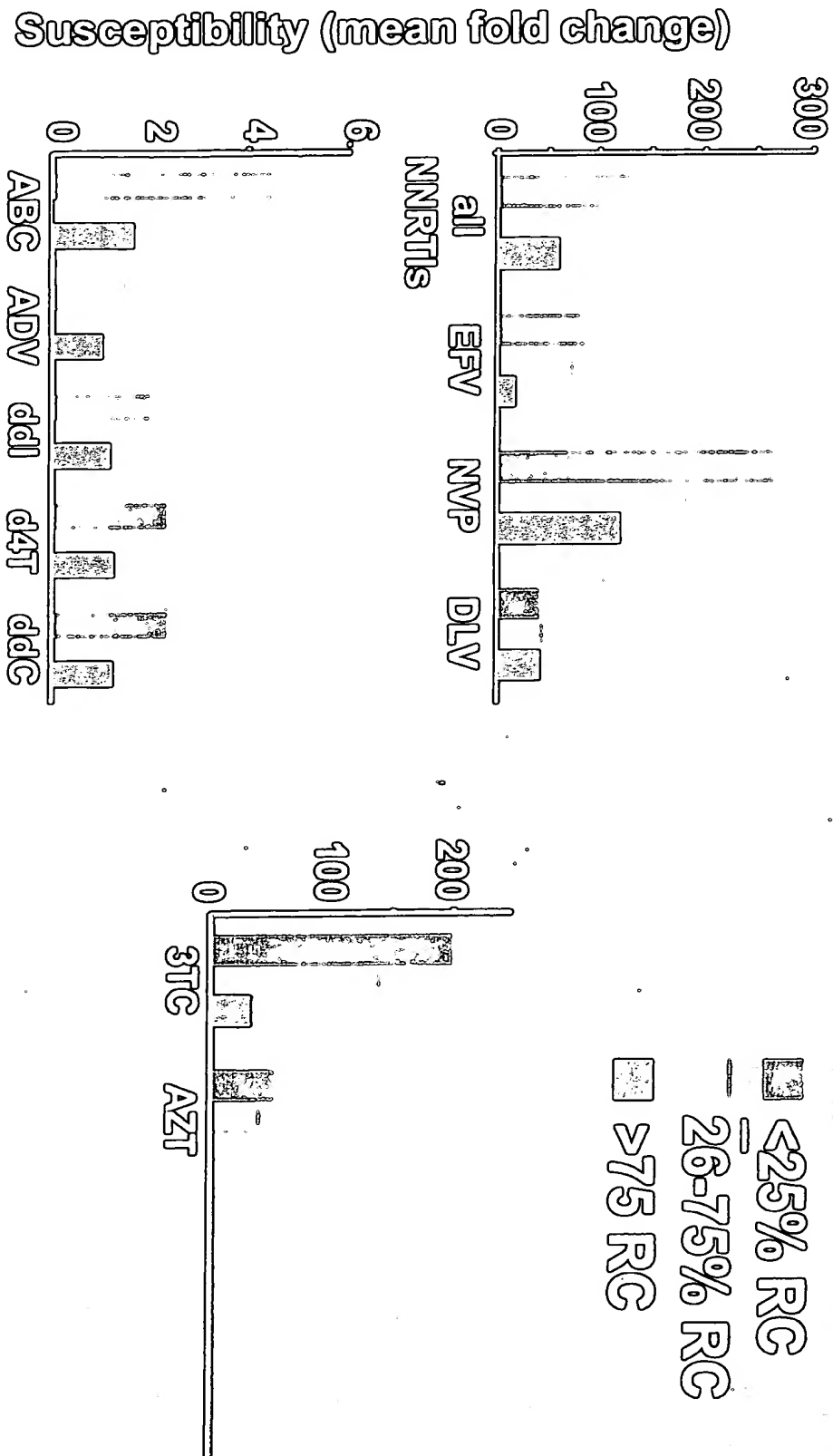
**p41% > 10%**

- RT% < 25
- RF% < 25

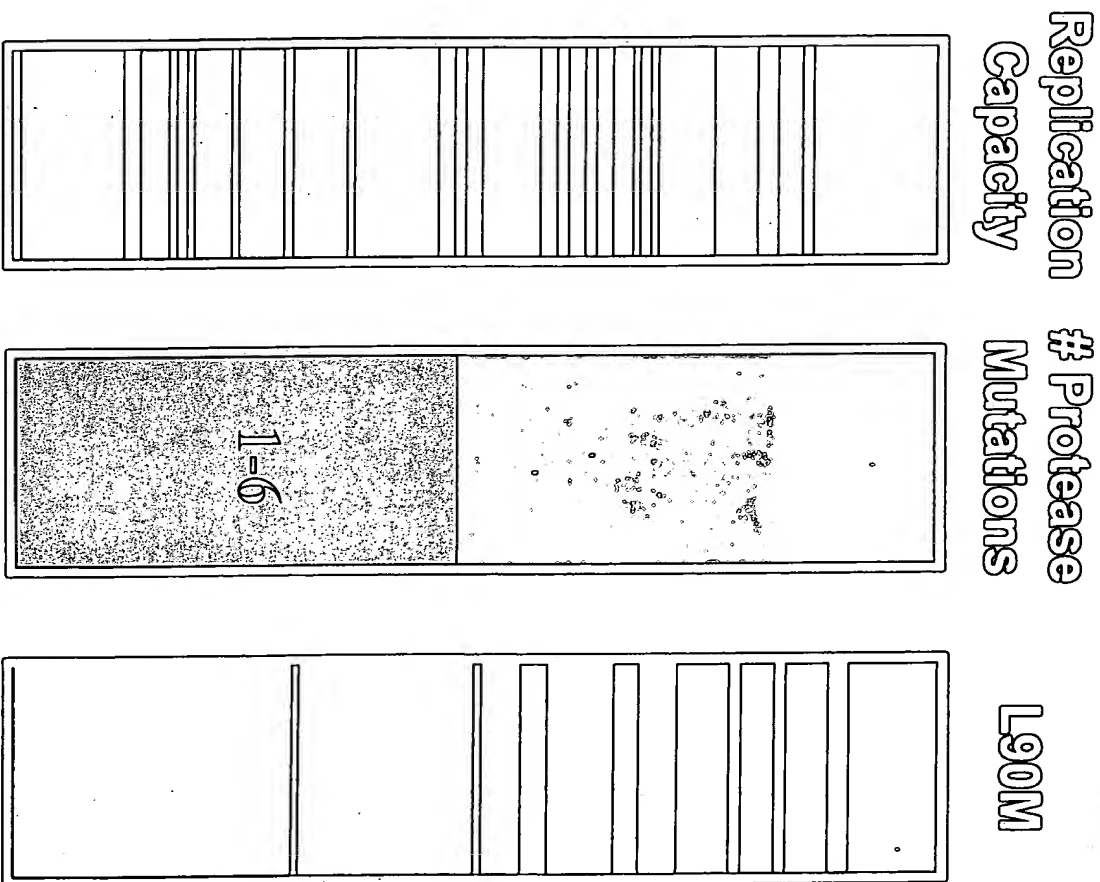
**Figure G: Relation of PI Resistance to  
Replication Capacity**



**Figure H: Relation of NRTI and NNRTI Resistance to Replication Capacity**

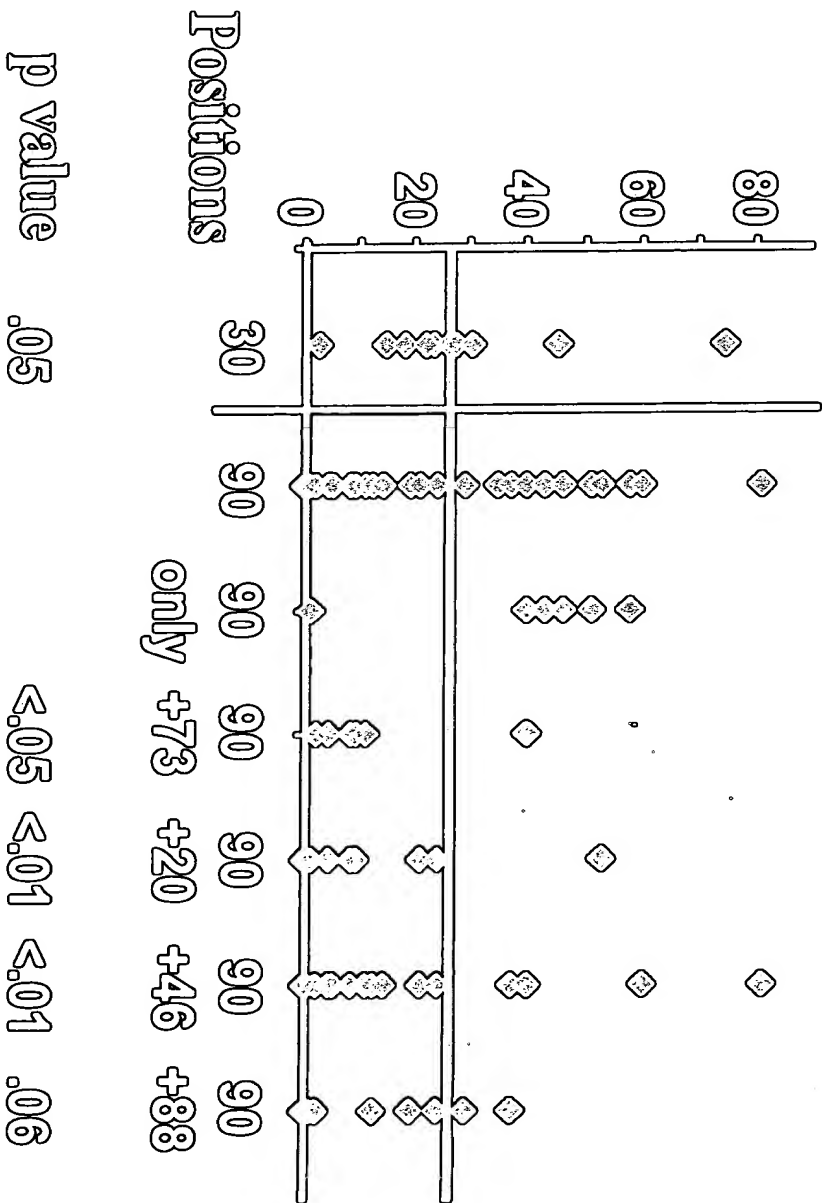


**Figure 1: Low Replication Capacity is Associated with High Numbers of Mutations in Protease and L90M**



**Figure J: Low Replication Capacity is Associated With Specific Protease Mutations**

- D30N
- L90M PLUS mutations at 73, 20, 46, or 88



**Figure K: Relation of NFV Phenotypic Drug Susceptibility, gag Processing and Replication Fitness**

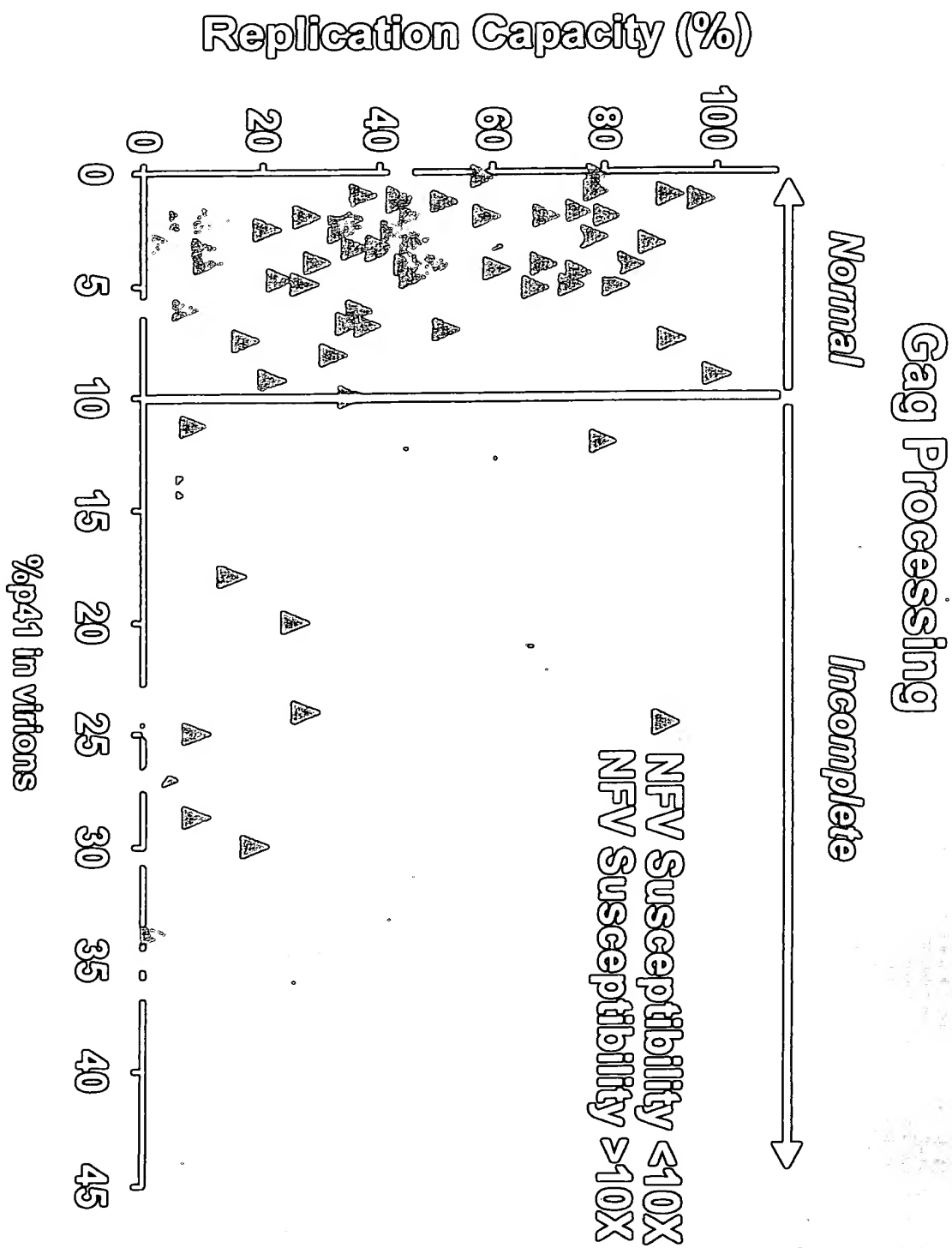
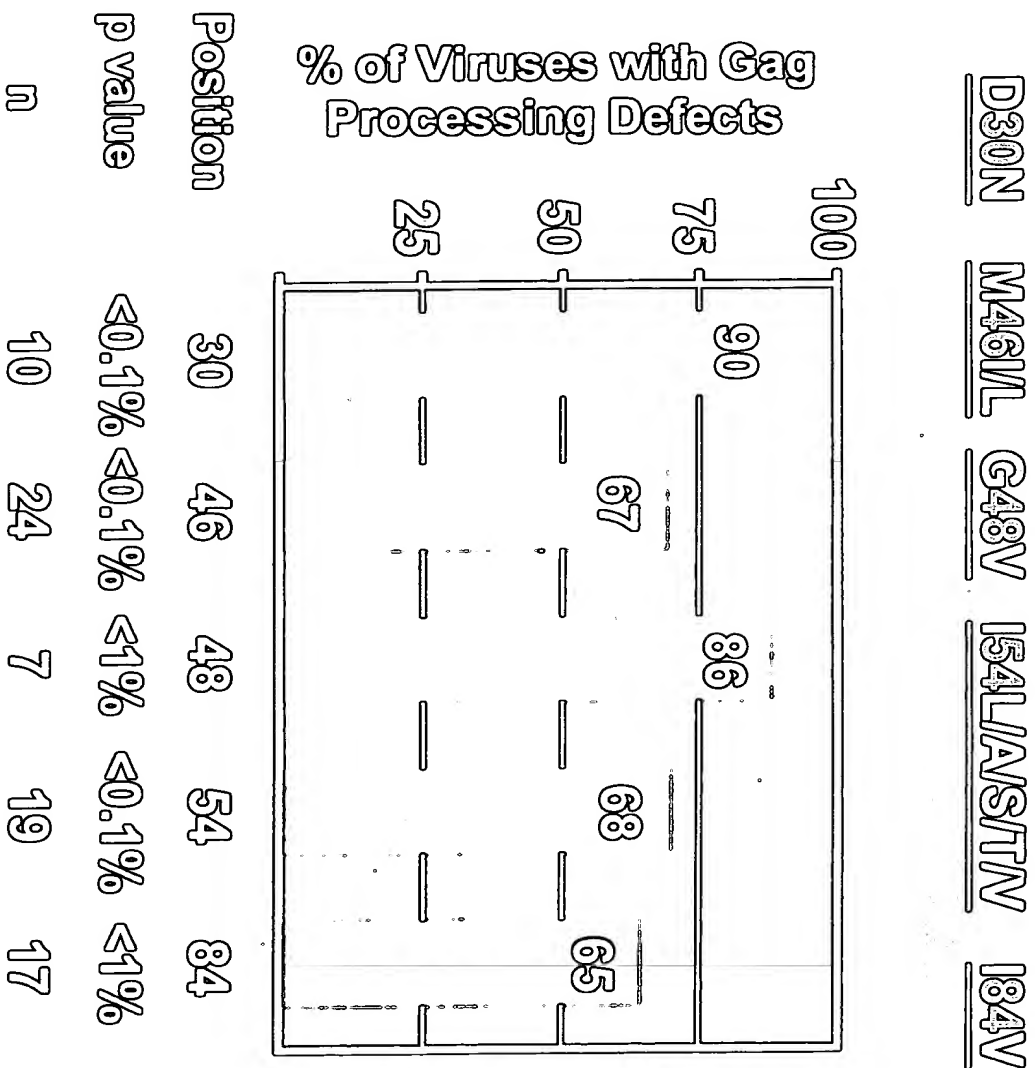




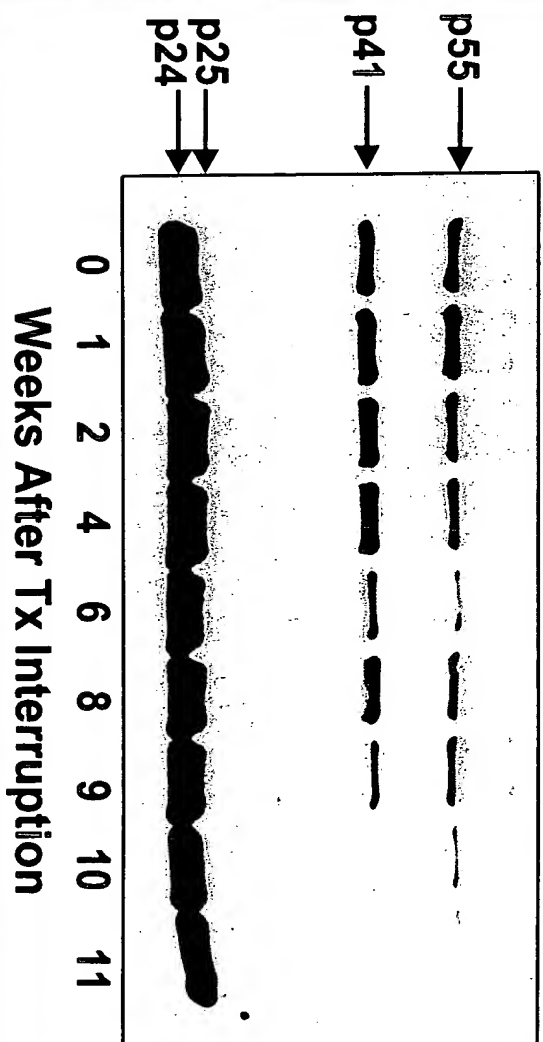
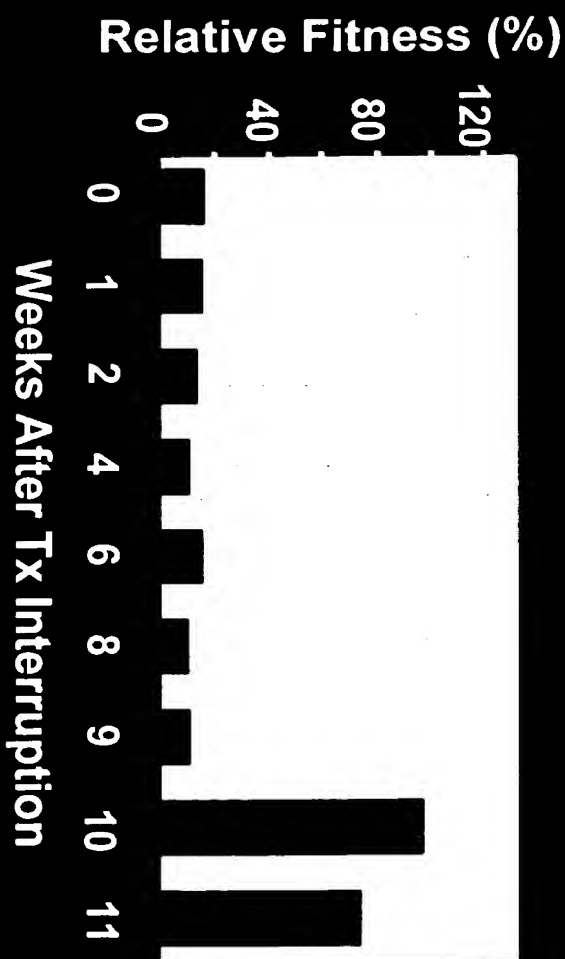
Figure L: Mutations in PR Associated with Gag Processing Defects



# Figure M: Patient Virus Reversion to Drug Susceptibility after Treatment Interruption

	NRTI			NNRTI			PI					
week	AZI	3TC	D4T	ABC	NVP	DLV	EFV	SQV	IDV	RTV	NFV	AMP
day 0	3.7	>100	2.8	1.3	>100	0.8	1.5	8.5	1.2	1.3	1.4	1.6
1	4.5	>100	3.3	2.1	>100	1.8	1.3	9.5	1.4	1.5	1.8	2.1
2	5.8	>100	3.2	1.4	>100	1.3	1.2	8.3	1.1	1.4	1.9	1.9
3	6.5	>100	2.7	1.5	>100	0.9	1.8	5.9	1.5	1.2	1.5	1.5
4	6.3	>100	3.1	1.5	>100	0.4	1.4	5.9	1.8	1.0	1.5	1.5
5	6.4	>100	3.0	1.7	>100	1.5	1.1	5.9	1.0	1.5	1.6	1.0
6	5.0	>100	2.8	1.9	>100	0.3	1.6	8.9	1.3	1.8	1.8	1.8
7	9.1	>100	4.1	1.2	>100	0.9	1.5	8.5	1.8	1.3	1.9	1.9
9	2.8	8.1	1.9	5.0	2.2	1.6	1.1	1.8	3.5	4.7	4.0	2.0
10	1.5	1.7	1.1	1.3	1.7	2.0	1.6	0.9	1.6	1.9	1.8	1.6
11	0.9	1.2	1.0	1.2	0.8	1.1	0.9	1.0	1.1	1.1	1.1	1.0
12	0.8	1.3	0.8	1.2	0.5	1.0	0.8	0.8	0.8	0.9	1.1	0.8
23	0.7	1.1	1.0	0.6	0.8	1.1	0.8	0.8	0.8	1.0	0.9	0.6

**Figure N: Patient Virus Reversion to Normal  
Replication Fitness after Treatment Interruption**



**Figure O: Replication Fitness during Treatment Interruption**

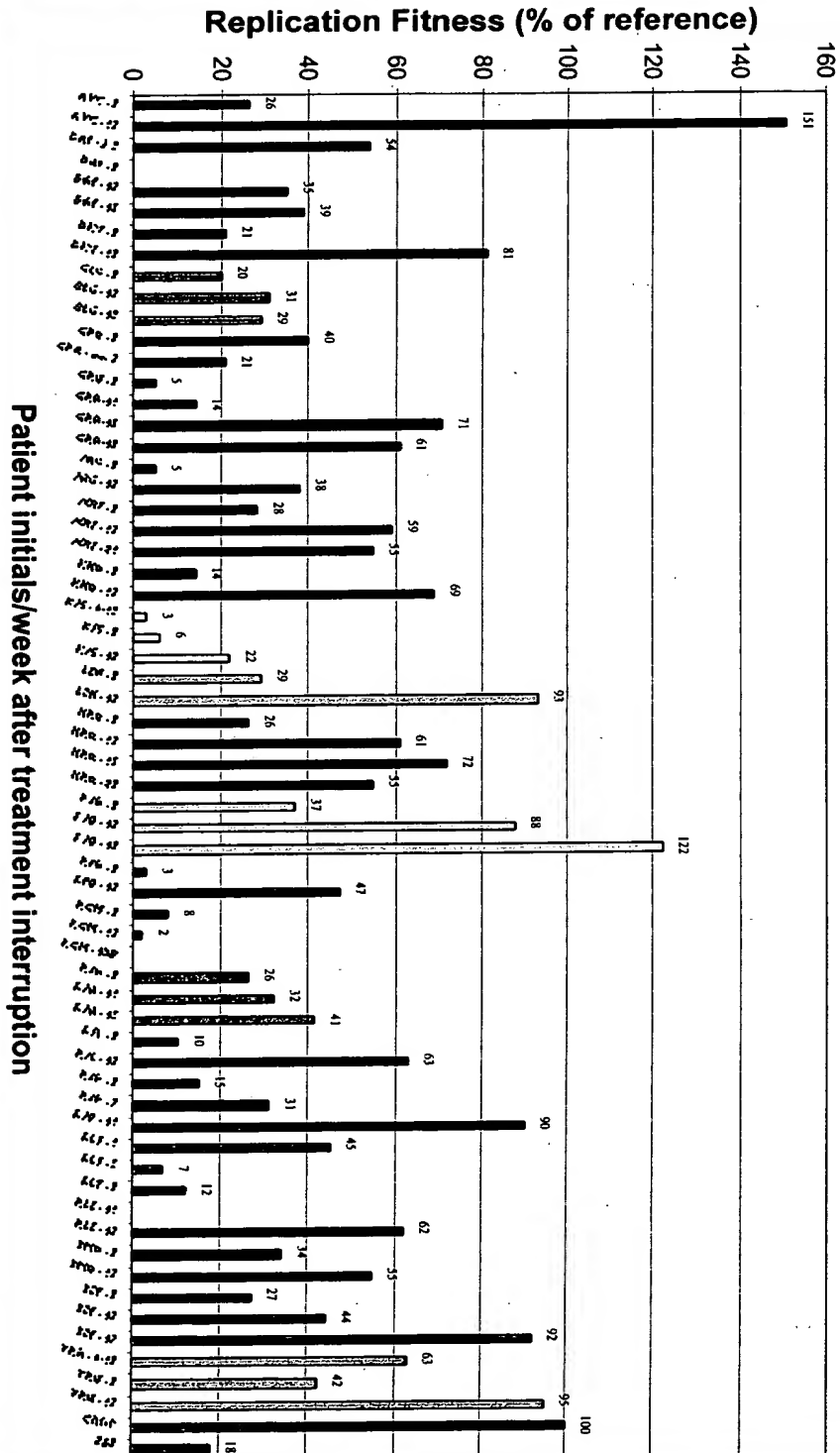


FIGURE P

# To Measure Replication Capacity of Patient-Derived Recombinant Viruses

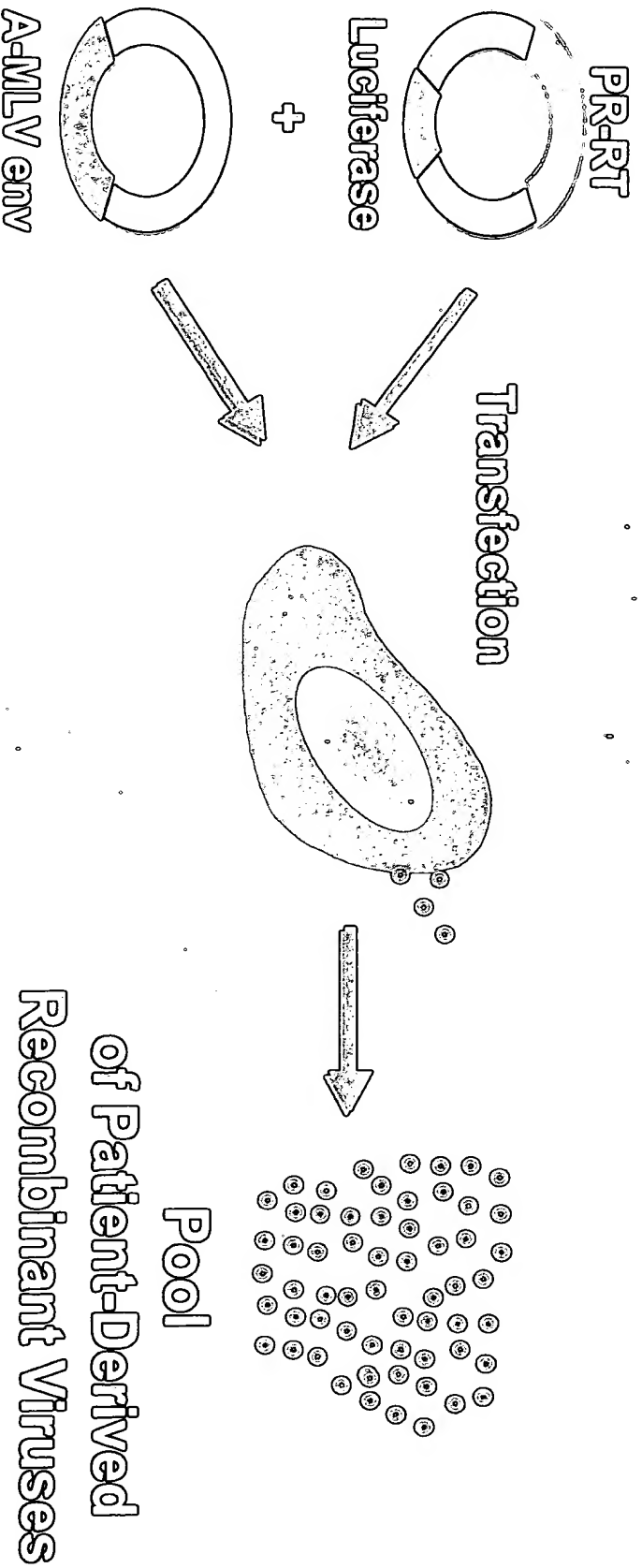
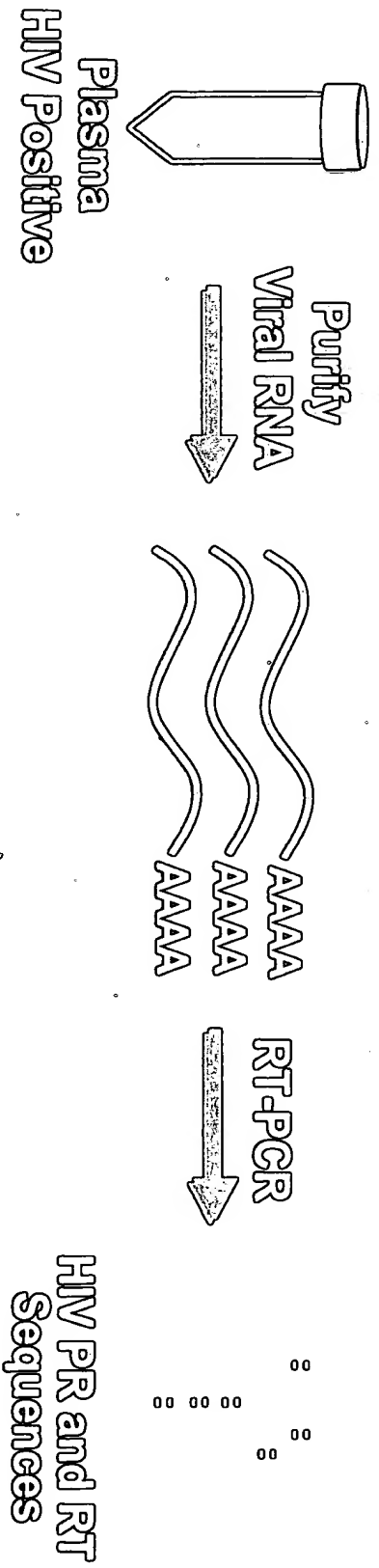


FIGURE 9

# To Measure Replication Capacity of Patient-Derived Recombinant Viruses

